www.safetycenter.navy.mil

Were the following mishaps **preventable**?

3
Temporary Insanity II

Night Time, Weekend Alcohol, Speed mix for Disaster

Service member and cousin were killed when the Acura they were traveling in hit the semi-trailer truck. The Acura, which investigators said was going more than 80 mph, crumpled on impact.

Fatal Motorcycle Accident

April 2007, 1:00 am

Excess of 100 mph

330
AD
NAVY

Overview

Operational Risk Management

Why ORM?

Implementation Strategy

Process

Resources

Summary

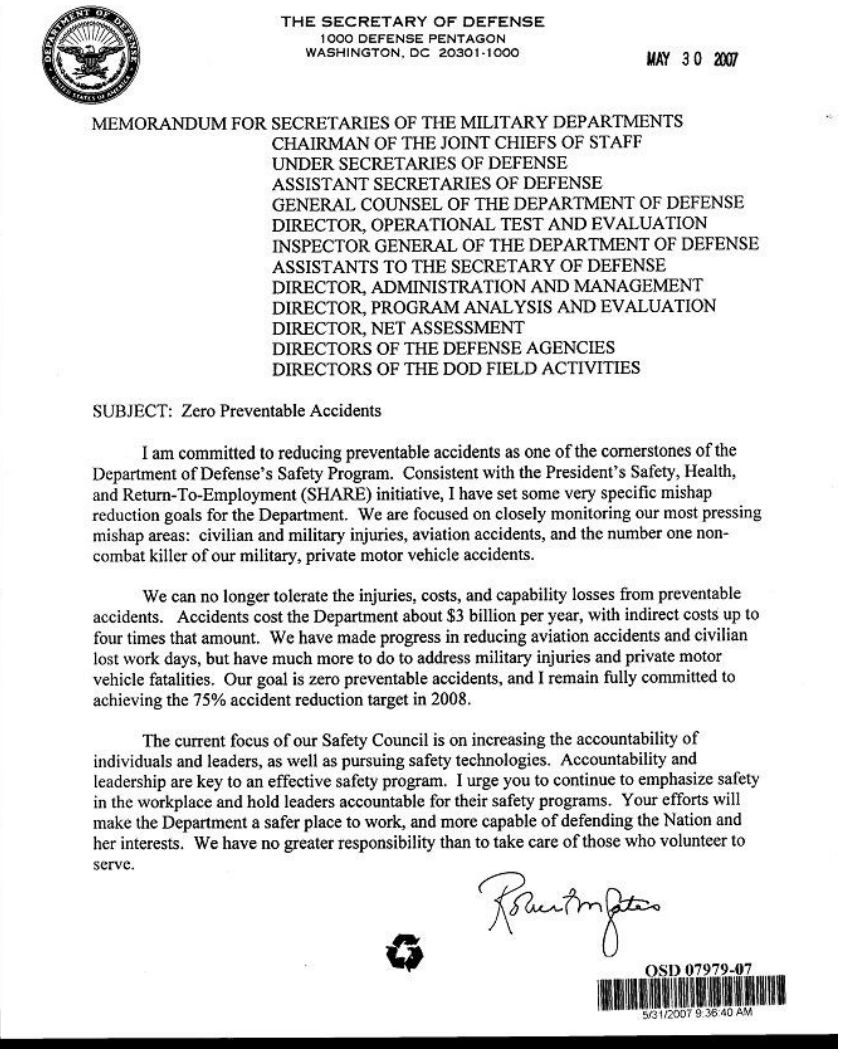
Why Risk Management?

How Did Our Sailors and Marines Die?

	187 Died in FY07	178 Died in FY08	121 Died in FY09
PMV	110 (59%)	118 (66%)	70 (58%)
Off-Duty Recreation	27 (11%)	32 (18%)	24 (20%)
Aviation	23 (12%)	6 (3%)	9 (7%)
Shore / Ground / MV	21 (11%)	15 (8%)	10 (8%)
PT		5 (3%)	4 (3%)
Surface			
Ships/Sub/Diving			

NSC Data: 01 Sep 09

Secretary Gates' Challenge



THE SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

MAY 30 2007

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
ASSISTANT SECRETARIES OF DEFENSE
GENERAL COUNSEL OF THE DEPARTMENT OF DEFENSE
DIRECTOR, OPERATIONAL TEST AND EVALUATION
INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE
ASSISTANTS TO THE SECRETARY OF DEFENSE
DIRECTOR, ADMINISTRATION AND MANAGEMENT
DIRECTOR, PROGRAM ANALYSIS AND EVALUATION
DIRECTOR, NET ASSESSMENT
DIRECTORS OF THE DEFENSE AGENCIES
DIRECTORS OF THE DOD FIELD ACTIVITIES

SUBJECT: Zero Preventable Accidents

I am committed to reducing preventable accidents as one of the cornerstones of the Department of Defense's Safety Program. Consistent with the President's Safety, Health, and Return-To-Employment (SHARE) initiative, I have set some very specific mishap reduction goals for the Department. We are focused on closely monitoring our most pressing mishap areas: civilian and military injuries, aviation accidents, and the number one non-combat killer of our military, private motor vehicle accidents.

We can no longer tolerate the injuries, costs, and capability losses from preventable accidents. Accidents cost the Department about $3 billion per year, with indirect costs up to four times that amount. We have made progress in reducing aviation accidents and civilian lost work days, but have much more to do to address military injuries and private motor vehicle fatalities. Our goal is zero preventable accidents, and I remain fully committed to achieving the 75% accident reduction target in 2008.

The current focus of our Safety Council is on increasing the accountability of individuals and leaders, as well as pursuing safety technologies. Accountability and leadership are key to an effective safety program. I urge you to continue to emphasize safety in the workplace and hold leaders accountable for their safety programs. Your efforts will make the Department a safer place to work, and more capable of defending the Nation and her interests. We have no greater responsibility than to take care of those who volunteer to serve.

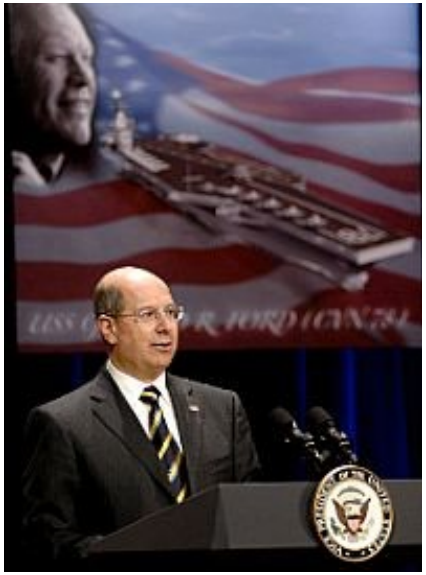
OSD 07979-07
5/31/2007 9:36:40 AM

"… Our **goal is zero preventable accidents** and I remain fully committed to achieving the 75% accident reduction target in 2008.

… The current focus of our Safety Council is on increasing the **accountability** of individuals and leaders, as well as pursuing safety technologies.

… We have no greater

DON's Guidance



"…**<u>Integrate Safety and Risk Management into all on and off-duty evolutions</u>** to maximize mission readiness and to establish DON as an organization with world class safety where no mishap is accepted as the cost of doing business…**<u>Establish a risk management training continuum</u>** to ensure all DON personnel receive targeted [ORM] training and that all formal professional training courses are infused with examples of how effective risk management improves both safety and mission readiness."

DON Objectives for FY 2008 and Beyond (9 Oct 07)

"**We manage risk**: We will identify, analyze, mitigate and then accept risk, appreciating that we must always consider the risks in aggregate across the entire force. **Zero risk is not achievable nor affordable**. We must manage risk and move forward to accomplish the mission while safeguarding our people and infrastructure."

CNO Guidance for 2007-2008 (25 Oct 07)

Accident (aka “Mishap”)

An unplanned and unfortunate event that results in damage and/or injury.

Why do mishaps occur?

Mishap investigations (reactive approach) reveal causal facto

Lack of:	*Abundance of:*
- Communication	**+ Distraction**
- Awareness	**+ Complacency**
- Resources	**+ Norms**
- Assertiveness	**+ Stress**
- Teamwork	**+ Fatigue**
- Knowledge	**+ Pressure**

Over 85% of all mishap are attributable to human factors failures

Are we learning?

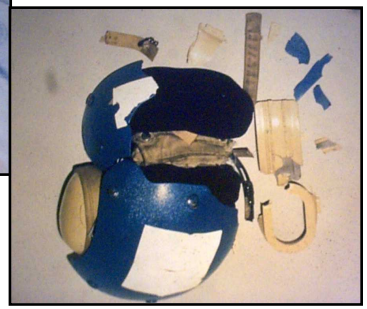
- **On the job?**
  - Aircraft Movement:
    - 2000: Tow tractor hit parked acft. Fatal injury.
    - 2003: During acft towing, person fatally crushed between store & dolly
    - 2004: Sqdn acft under tow direction of yellow shirt ran over ship's blue shirt. Permanent disability
    - 2005: Wing walker's leg run over by acft during move – permanent disability
    - 2006: Acft ran over airman's right leg during taxi on flight deck – permanent disability
    - 2007: While towing acft airman caught and dragged under right wheel and suffered skin and muscle damage
    - 2007: Wing walker injured while acft being towed.
  - Lack of supervision – guidance – enforcement
  - Complacency - Perceived “Low Risk” evolution
  - Loss of Situational Awareness
  - Lack of Time Critical RM
- **Off-Duty?**

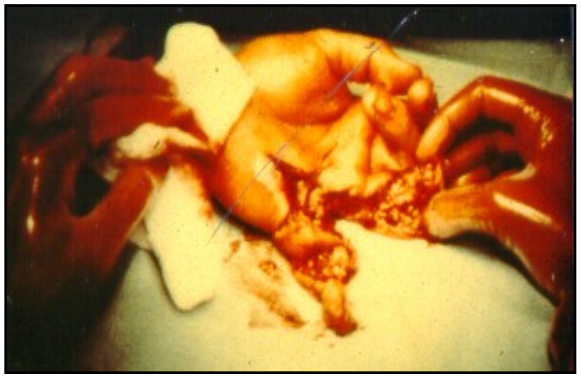
Are we learning?

Are we learning?

Bottom-line

Action / Inaction by **own forces** causing losses far exceeding those caused by **Red Threat**





- **Degradation in mission readiness**
- **Impact to mission accomplishment**
- **Impact to the Team, Family & Friends**

ORM is a tactic to help reduce the Blue T

Reaching the War Fighter

THE NAVY & MARINE CORPS AVIATION SAFETY MAGAZINE
www.safetycenter.navy.mil • September-October 2006
Approach
When You look in the Mirror, Are You
The Blue THREAT?

Threat Losses (FY Jan '91-07)

Red Threat - 18 Aircraft Destroyed

vs.

Blue Threat - 531 Aircraft

~~The Blue Threat~~

Puts the concepts in to terms the War Fighter understands

Hazards = Threats

ORM = Tactics

CRM = Skills

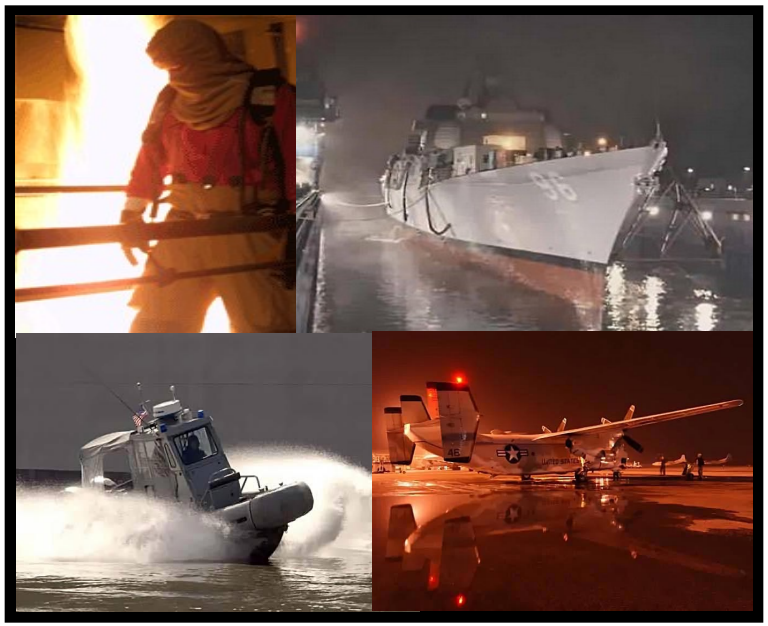
Integration Strategy

Controls derived from In-Depth & Deliberate ORM exist everywhere,

in all activities throughout the unit

maintenance programs, redundant systems, Standard Operating Procedures, checklists, flight briefs, Rules of Engagement, flight gear, survival equipment, etc.

ORM
Where we want to be…



We will manage risk to operate by following a standardized and institutionalized common model of ORM application and assessment across the fleet.

Integrate risk management concepts across the fleet **as part of every decision** made and **every action** taken by every Sailor and DON Civilian employee – **on and off duty**

How do you change a mindset?

(Who is looking out for whom?)

Establishing an ORM Mindset

- **Policy & Leadership**
  - Focus all levels of leadership on key ORM implementation issues
  - Develop and refine policy and guidance for the Fleet
- **Assessment & Feedback**
  - Accountability
  - Assist in development and integration of assessment process for the Fleet
  - Partner with force commanders and readiness evaluators
  - Institute vehicles for “Best Practice” dissemination
- **Education & Training**
  - Implement an ORM Learning Continuum from accession to retirement
  - Partner with training and accession commands
  - Standardize training and education across the Fleet
- **Resources & Tools**
  - Create and share tools to facilitate integration across the Fleet

Goal: Risk Management is an integral part of Navy

ORM Process

ORM is a systematic approach to managing risks to **increase mission success** with minimal losses. This involves identifying and assessing hazards for risk, controlling risks, supervising and revising as needed.

Risk to Mission, Force, and Self

What ORM "IS NOT"

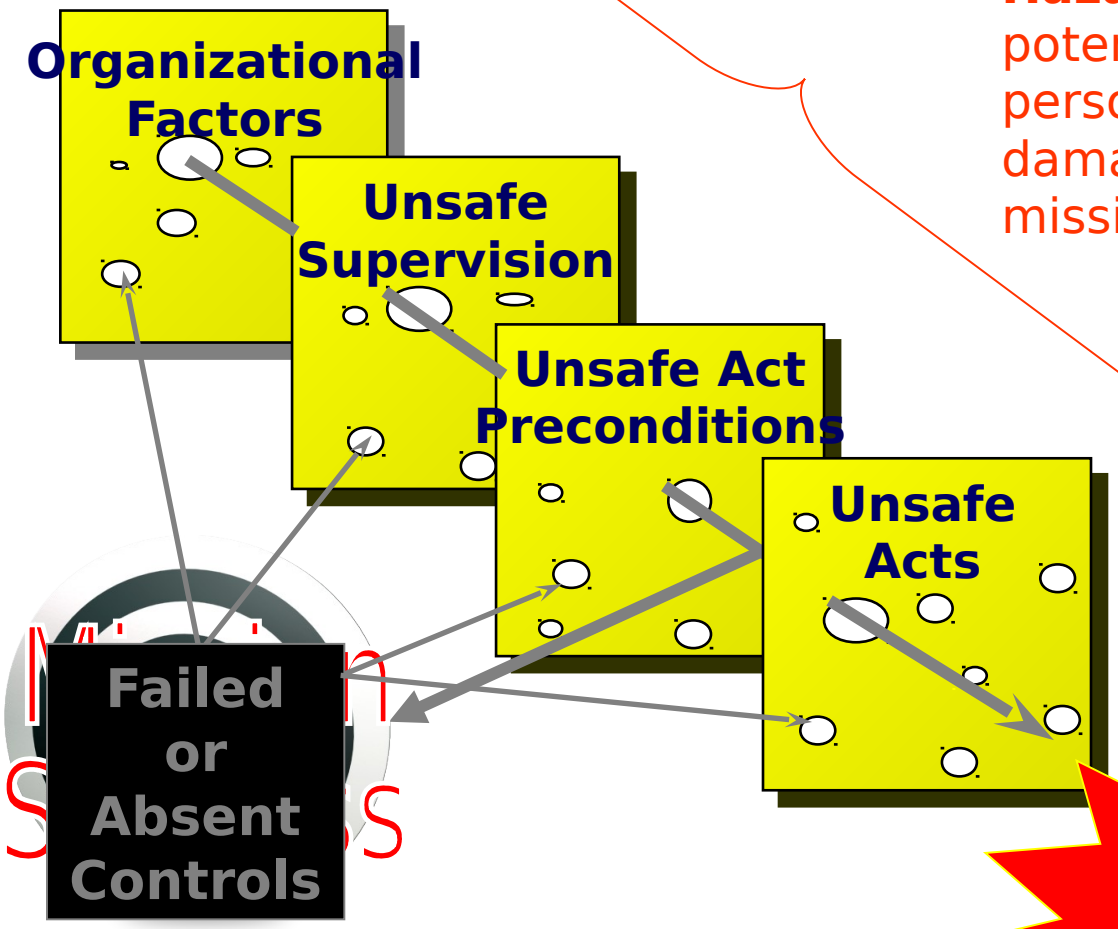
- **About avoiding risk**
- A safety only program
- Limited to complex-high risk evolutions
- Just another program
- Only for on-duty
- Just for your boss
- Just a planning tool
- **Automatic** or Static
- **A replacement for:**
  - **Sound tactical decision making**
  - **Rehearsals and TTPs**
- A 'zero defect' mindset
- **A fail-safe process**
- A bunch of checklists
- A bullet in a briefing guide
- **An excuse to violate the law, policies, directives, or procedures**
- Someone else's job
- A well kept secret
- Difficult
- **About limiting the commander's flexibility, initiative or accountability**

What ORM "IS"

- A methodology, **applicable to any activity**, to enhance decision-making skills
- Accomplishing the mission with acceptable risk
- Planning using a **systematic, continuous and repeatable process**
- **Based on experience**
- Following TTPs
- Watching for change
- Flexible and scalable
- **Working as a team**

- **A mindset**
- **Asking "What's Different"**
- Skill and knowledge dependent
- Sharing experience, lessons learned
- About Using available tools and resources – **Resource Management**
- Applied, standardized **"common sense"**
- "Looking before you leap"
- **As in-depth as time permits**

Preventing Mishaps
A Proactive Approach



Hazard – Condition w/ potential to cause personal injury, damage to property, or mission degradation

Remove one causal factor or consequential error

ORM
A systematic process, not a program

3 Levels

Time Critical

Deliberate

In Depth

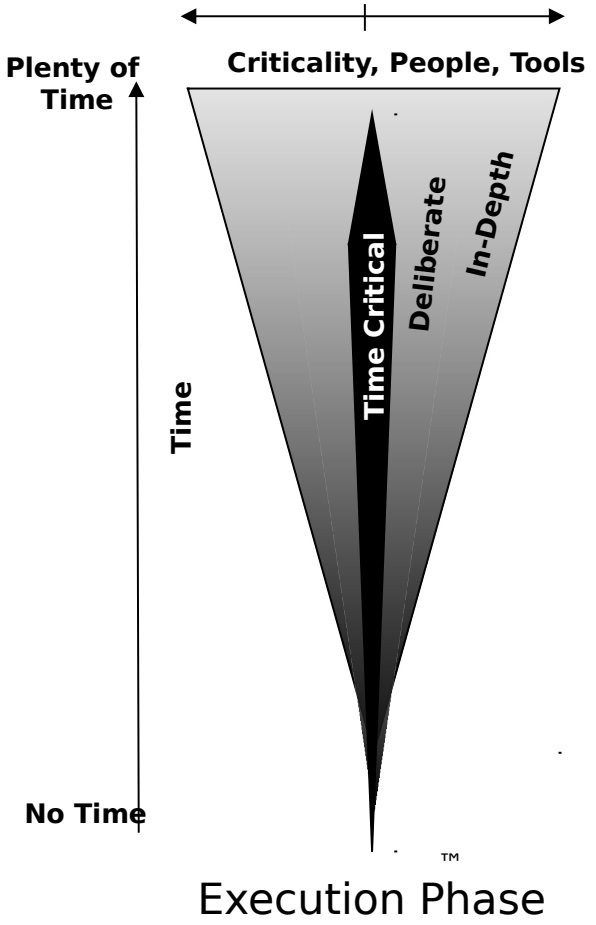
5 Steps

4 Principles

- ✓ Accept no unnecessary risk.
- ✓ Anticipate and manage risk by planning.
- ✓ Make risk decisions at the right level.
- ✓ Accept risks when benefits outweigh the costs.

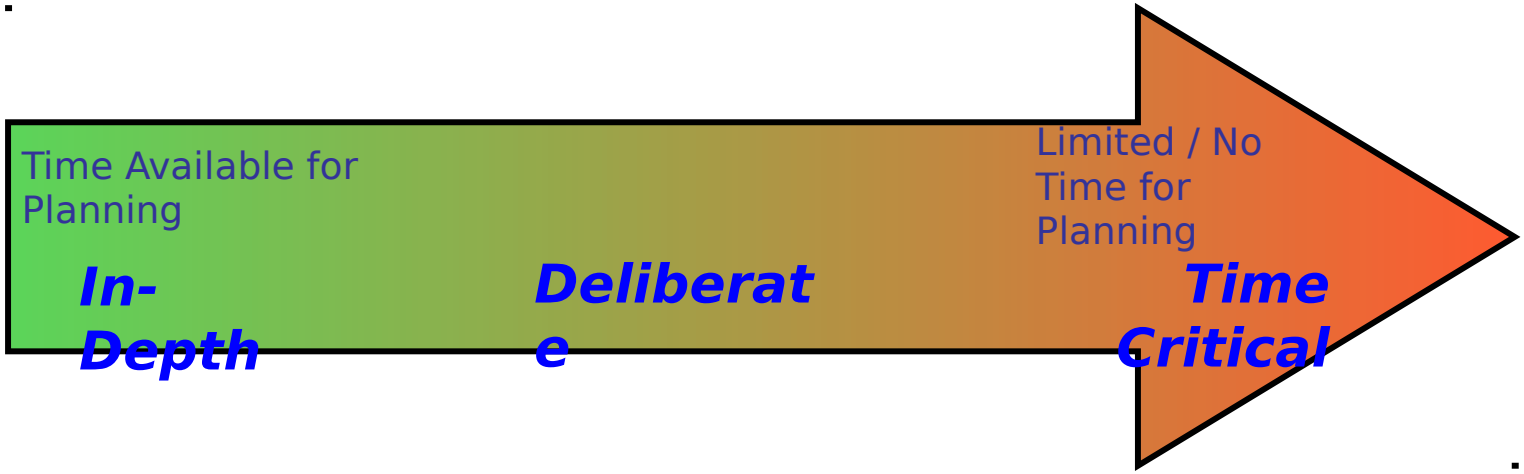
3 Levels

- "**In-depth**" – Long term, documented, formal application of all five steps with a very thorough hazard identification and risk assessment through research, testing, simulation, statistics, etc. (Ex: service level, system acquisition)
- "**Deliberate**" – Formal application of the complete five-step process where hazards, risks, controls, and supervision are documented. (Ex: deployment planning, mission planning)
- "**Time Critical**" – Application of the principles and functional processes during execution where time precludes a formal approach…done on the run. (Ex: in-flight emergency, change in briefed mission)



Risk Management Levels

Strategic → **Tactical**



- **Charts/Flips**
- **Ship / Aircraft** (Systems Safety)
- **Instructions** (3710, 5102, 4790)
- **NATOPS**
- **Equipment** (PPE)
- **Training**

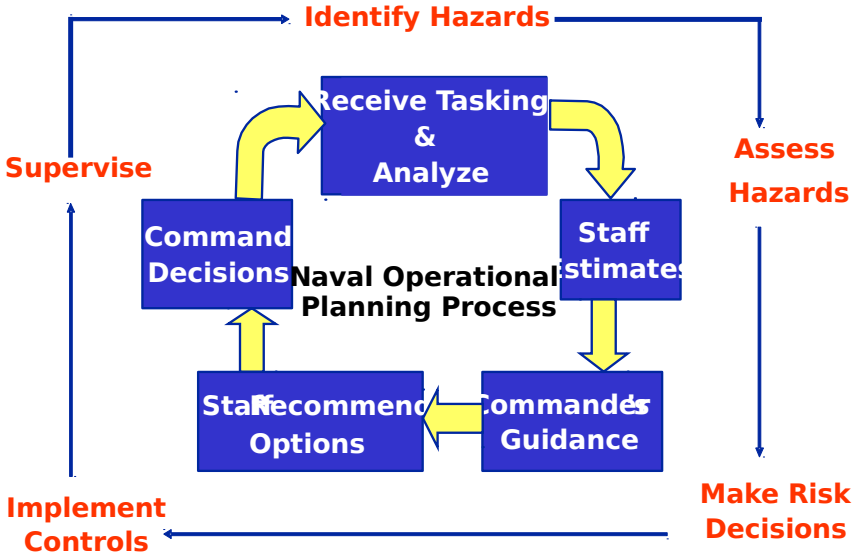
- **Ops Planning**
- **SOPs**
- **Briefings**
- **CO Guidance**
- **OJT**

- **Mission Execution Checklist**
- **Change Management** (Environment, Mission, Emergency Procedures, Crew Change)
- **Equipment / Systems Degradation**

Controls from one level become resou

4 Principles

- "**Anticipate and manage risk by planning**" – risks are more easily controlled when identified early in planning



- **Integrate risk management into all levels of planning**
- **Dedicate time and resources to apply risk management effectively**
- **Include hazards in orders to assist subordinates**
- **Don't assume hazards away**

4 Principles

- "**Accept risk when benefits outweigh the costs**" – the goal is not to eliminate risk, which is inherent in what we do, but to manage it so that we can accomplish the mission with minimal losses. Leaders must consider benefits and costs associated with a hazard's risks to make informed decisions.

Sustaining a bold, risk-taking organization is always a challenge in peace and war…ORM helps.

4 Principles

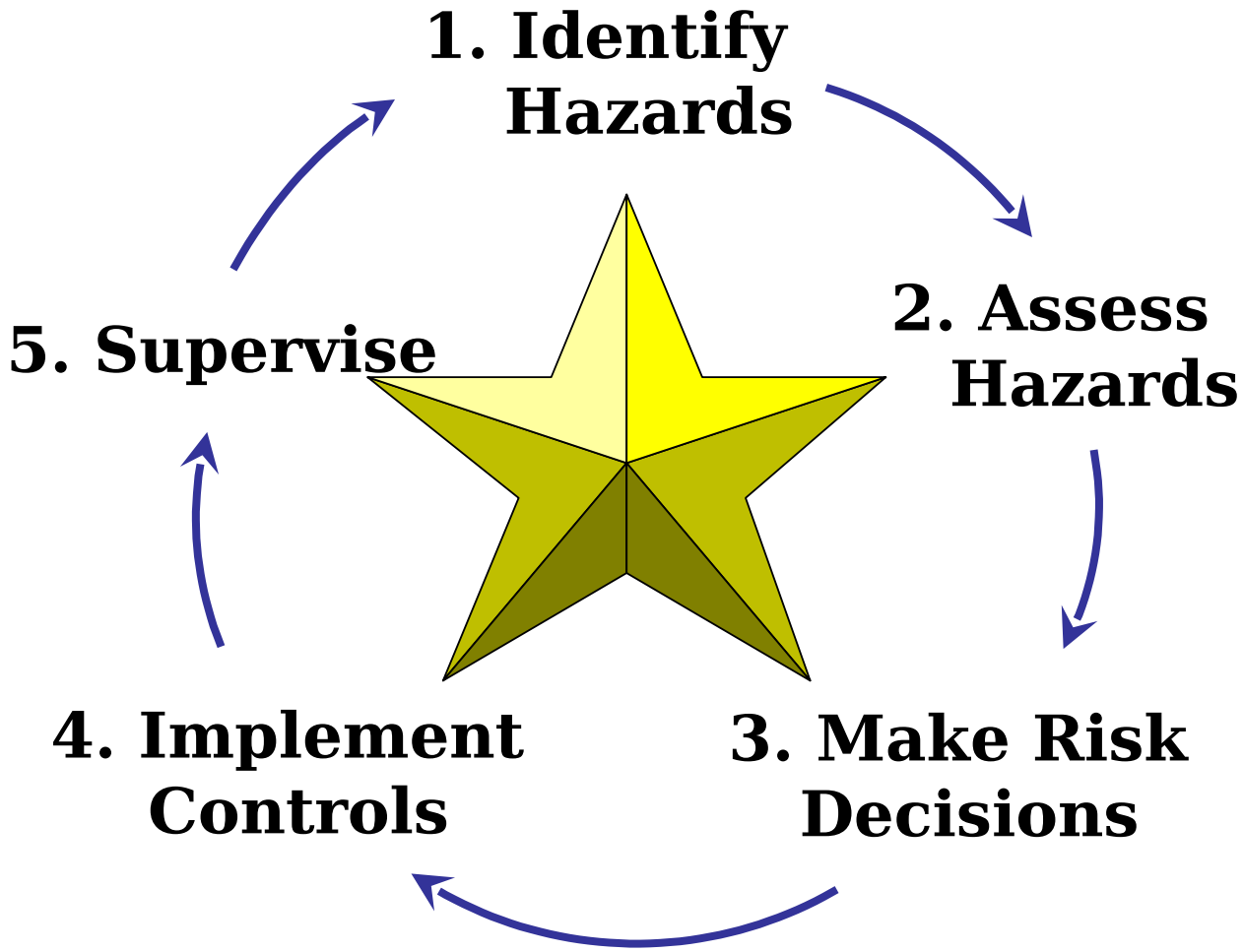
- "**Accept no unnecessary risks**" – only accept those risks that are necessary to accomplish the mission.

  - **If all detectable hazards and their associated causes have not been detected, then unnecessary risks are being accepted.**
  - **ORM process provides a systematic, repeatable approach to identify hazards / threats that otherwise may go undetected.**

4 Principles

- "**Make risk decisions at the right level**" – risk management decisions should be made by the leader directly responsible for the operation. If the hazard's risk cannot be controlled at his level, leaders shall elevate the risk decision to their chain of command.
  - **Who has the legal / organizational authority to make the de**
  - **Who has the maturity and experience to make the decision**
  - **Who has on-scene knowledge?**
  - **Who has the resources to mitigate the risk?**
  - **Who will answer in the event of a mishap?**

5 Step Systematic Process



Identify Hazards

Operational Analysis

Determine specified & implied tasks

Break down into small steps

Pull from lessons learned

List Hazards

Spend 30-40% of total ORM time

List hazards for each step

Use "What if…" tool

Focus on "What's different today?"

Determine Hazard Root Causes

Target root causes vice symptoms

Keep asking "Why?" until answered

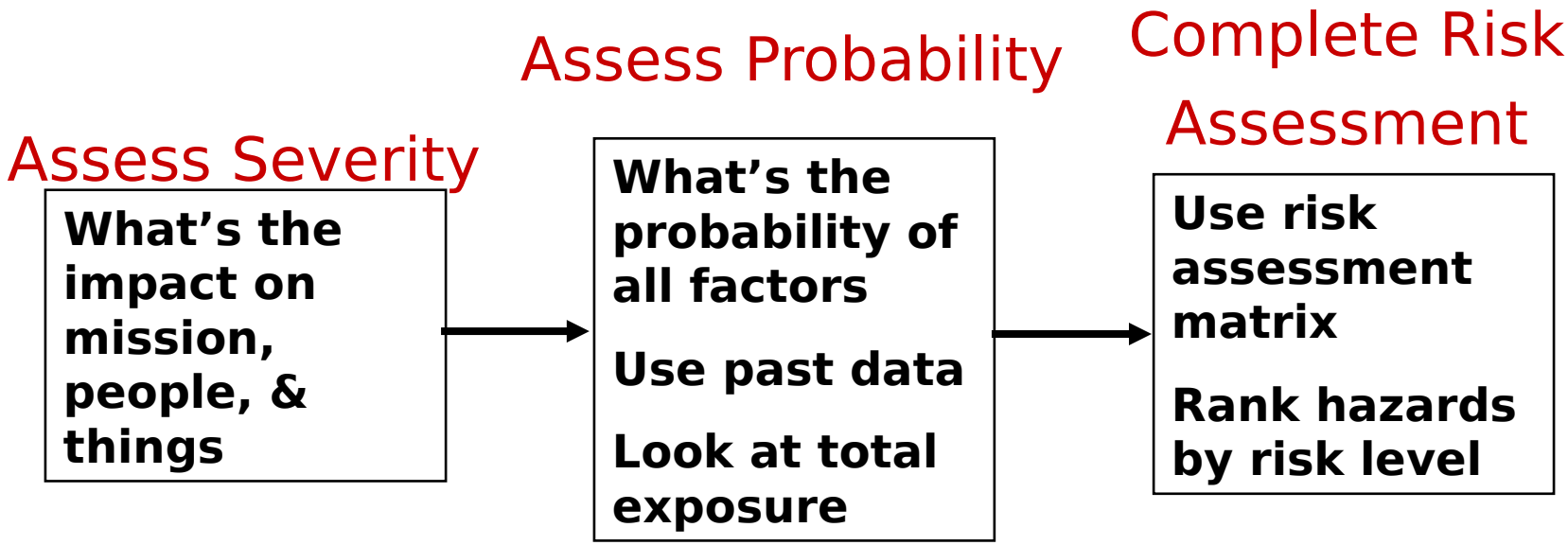
Involve Operators / Subject Matter Experts

Straits Transit Risk Assessment

Deliberate ORM Example

Hazard/Threat Effect	Assess	RAC	Risk Control Action	Re-assess	Residual	Supervision
Grounding/Flooding/ Navigation error						
Blue/White Collision						
Non-compliant, non-squawking low slow flyer						
Tide/current/waves						
Fog/Reduced visibility/Inclement weather						
Unknown submarine IVO PIM/Vital Area						
Terrorist attack						
Inattention/ complacency						

Assess Hazards


Assess Severity
What's the impact on mission, people, & things
Assess Probability
What's the probability of all factors
Use past data
Look at total exposure
Complete Risk Assessment
Use risk assessment matrix
Rank hazards by risk level

Involve Operators / Subject Matter Experts

Severity and Probability

SEVERITY

Category I - The hazard may cause **death, loss of facility/asset, or mission failure.**

Category II - The hazard may cause **severe** injury, illness, property damage, or serious mission degradation.

Category III - The hazard may cause **minor** injury, illness, property damage, or minor mission degradation.

Category IV - The hazard presents a **minimal** threat to personnel safety or health,

PROBABILITY

Sub-Category A - Likely to occur immediately or within a short period of time. Expected to occur frequently to an individual item or person or continuously to a fleet, inventory or group.

Sub-Category B - Probably will occur in time. Expected to occur several times to an individual item or person or frequently to a fleet, inventory or group.

Sub-Category C - May occur in time. Can reasonably be expected to occur some time to an individual item or person or several times to a fleet, inventory or group.

Risk Assessment Matrix

Risk Management Matrix **OPNAVINST 3500.39B**		PROBABILITY			
		A Likely	**B** Probable	**C** May	**D** Unlikely
SEVERITY	I Death, Loss of Asset	1	1	2	3
	II Severe Injury, Damage	1	2	3	4
	III Minor Injury, Damage	2	3	4	5
	IV Minimal Threat	3	4	5	5

1-Critical 2-Serious 3-Moderate 4-Minor 5-Negligible

Straits Transit Risk Assessment

Deliberate ORM Example

Hazard/Threat Effect	Assess	RAC	Risk Control Action	Re-assess	Residual	Supervision
Grounding/Flooding/ Navigation error	C, II	3				
Blue/White Collision	C, I					
Non-compliant, non-squawking low slow flyer	B, I					
Tide/current/waves	A, III					
Fog/Reduced visibility/Inclement weather	B, II					
Unknown submarine IVO PIM/Vital Area	B, II					
Terrorist attack	D, I					
Inattention/ complacency	A, III					

Risk Management Matrix OPNAVINST 3500.39B

SEVERITY	PROBABILITY A Likely	B Probable	C May	D Unlikely
I Death, Loss of Asset	1	1	2	3
II Severe Injury, Damage	1	2	3	4
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1-Critical 2-Serious 3-Moderate 4-Minor 5-Negligible

= Critical Risk = Serious Risk = Moderate Risk = Minor Risk = Negligible Risk

Deliberate ORM Example

Straits Transit Risk Assessment

Hazard/Threat Effect	Assess	RAC	Risk Control Action	Re-assess	Residual	Supervision
Grounding/Flooding/ Navigation error	C, II	3				
Blue/White Collision	C, I	2				
Non-compliant, non-squawking low slow flyer	B, I	1				
Tide/current/waves	A, III	2				
Fog/Reduced visibility/Inclement weather	B, II	2				
Unknown submarine IVO PIM/Vital Area	B, II	2				
Terrorist attack	D, I	3				
Inattention/ complacency	A, III	2				

Risk Management Matrix **OPNAVINST 3500.39B**

SEVERITY	PROBABILITY A Likely	B Probable	C May	D Unlikely
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Deliberate ORM Example

Straits Transit Risk Assessment

Hazard/Threat Effect	Assess	RAC	Risk Control Action	Re-assess	Residual	Supervision
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Blue/White Collision	C, I	2				
Non-compliant, non-squawking low slow flyer	B, I	1				
Tide/current/waves	A, III	2				
Fog/Reduced visibility/Inclement weather	B, II	2				
Unknown submarine IVO PIM/Vital Area	B, II	2				
Terrorist attack	D, I	3				
Inattention/ complacency	A, III	2				

Identified Risk

Risk Management Matrix OPNAVINST 3500.39B

SEVERITY	PROBABILITY A Likely	B Probable	C May	D Unlikely
I Death, Loss of Asset	1	1	2	3
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IV Minimal Threat	3	4	5	5

1-Critical 2-Serious 3-Moderate 4-Minor 5-Negligible

= Critical Risk = Serious Risk = Moderate Risk = Minor Risk = Negligible Risk

Make Risk Decisions

Identify Control Options

Systems / Engineering:
- Material selection, Design
- Often not feasible

Supervisory / Administrative:
- Instructions, Policies, SOPs, ROEs
- Flight briefs, checklists
- TTPs
- Training
- Effective if properly used / enforced

Personal Protective Equipment:
- Eye & hearing protection
- Flight & survival Gear
- Least effective type of control - does not reduce the probability of a mishap occurring, it only reduces the severity when a mishap does occur.

Determine Control Effects

What's the impact on probability & severity

What's the risk control cost

How do they work together

Make Risk Decisions

Determine residual risk

Make risk decisions at right level

Ensure benefits outweigh costs

Involve Operators / Subject Matter Experts

Deliberate ORM Example

Straits Transit Risk Assessment

Hazard/Threat Effect	Assess	RAC	Risk Control Action	Re-assess	Residual	Supervision
Grounding/Flooding/ Navigation error	C, II	3	SUWC: ensure ships' report RMD in effect, fixes every 2 min. w/ confidence & sources, OOD/Conn be proactive w/ identifying & communicating.			
Blue/White Collision	C, I	2	SUWC: pass shipping info., ships adhere to Rules of the Road, use Furuno/ARPA, dec. speed in strait, pass contacts to BWC/SUWC on net.			
Non-compliant, non-squawking low slow flyer	B, I	1	ADC: proactively identify & resolve tracks; CFMCC: set weapons posture & status for threat; IWC: monitor & report I&W to BWC/ADC on net.			
Tide/current/waves	A, III	2	SUWC: plan during favorable conditions, pass to restrict access to wx decks during high seas, update BWC on changes.			
Fog/Reduced visibility/Inclement weather	B, II	2	SUWC: ensure ships report restrictred visibility detail, use bell & horn, slow as needed.			
Unknown submarine IVO PIM/Vital Area	B, II	2	ASWC: notify BWC/SUWC of known/unknown sub location; BWC: launch alert ASW if needed.			
Terrorist attack	D, I	3	BWC: PPRs; SUWC: man ships' 50-cals.; ADC: direct ATFP/SAR helo			
Inattention/ complacency	A, III	2	SUWC: limit RMD watch duration; ALL: ensure rested & nourished			

= Critical Risk = Serious Risk = Moderate Risk = Minor Risk = Negligible Risk

Deliberate ORM Example

Straits Transit Risk Assessment

Hazard/Threat Effect	Assess	RAC	Risk Control Action	Re-assess	Residual	Supervision
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Blue/White Collision	C, I	2	SUWC: pass shipping info., ships adhere to Rules of the Road, use Furuno/ARPA, dec. speed in strait, pass contacts to BWC/SUWC on net.	D, II		
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Tide/current/waves	A, III	2	SUWC: plan during favorable conditions, pass to restrict access to wx decks during high seas, update BWC on changes.	A, IV		
Fog/Reduced visibility/Inclement weather	B, II	2	SUWC: ensure ships report restrictred visibility detail, use bell & horn, slow as needed.	B, IV		
Unknown submarine IVO PIM/Vital Area	B, II	2	ASWC: notify BWC/SUWC of known/unknown sub location; BWC: launch alert ASW if needed.	C, III		
Terrorist attack	D, I	3	BWC: PPRs; SUWC: man ships' 50-cals.; ADC: direct ATFP/SAR helo	D, III		
Inattention/ complacency	A, III	2	SUWC: limit RMD watch duration; ALL: ensure rested & nourished	B, III		

Risk Management Matrix **OPNAVINST 3500.39B**

SEVERITY	A Likely	B Probable	C May	D Unlikely
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Deliberate ORM Example

Straits Transit Risk Assessment

Hazard/Threat Effect	Assess	RAC	Risk Control Action	Re-assess	Residual	Supervision
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Blue/White Collision	C, I	2	SUWC: pass shipping info., ships adhere to Rules of the Road, use Furuno/ARPA, dec. speed in strait, pass contacts to BWC/SUWC on net.	D, II	4	
Non-compliant, non-squawking low slow flyer	B, I	1	ADC: proactively identify & resolve tracks; CFMCC: set weapons posture & status for threat; IWC: monitor & report I&W to BWC/ADC on net.	C, II	3	
Tide/current/waves	A, III	2	SUWC: plan during favorable conditions, pass to restrict access to wx decks during high seas, update BWC on changes.	A, IV	3	
Fog/Reduced visibility/Inclement weather	B, II	2	SUWC: ensure ships report restrictred visibility detail, use bell & horn, slow as needed.	B, IV	4	
Unknown submarine IVO PIM/Vital Area	B, II	2	ASWC: notify BWC/SUWC of known/unknown sub location; BWC: launch alert ASW if needed.	C, III	4	
Terrorist attack	D, I	3	BWC: PPRs; SUWC: man ships' 50-cals.; ADC: direct ATFP/SAR helo	D, III	5	
Inattention/ complacency	A, III	2	SUWC: limit RMD watch duration; ALL: ensure rested & nourished	B, III	3	

Risk Management Matrix **OPNAVINST 3500.39B**

SEVERITY	PROBABILITY A Likely	B Probable	C May	D Unlikely
I Death, Loss of Asset	1	1	2	3
II Severe Injury, Damage	1	2	3	4
III Minor Injury, Damage	2	3	4	5
IV Minimal Threat	3	4	5	5

1-Critical 2-Serious 3-Moderate 4-Minor 5-Negligible

= Critical Risk = Serious Risk = Moderate Risk = Minor Risk = Negligible Risk

Deliberate ORM Example

Straits Transit Risk Assessment

Hazard/Threat Effect	Assess	RAC	Risk Control Action	Re-assess	Residual	Supervision
Grounding/Flooding/ Navigation error	C, II	3	SUWC: ensure ships' report RMD in effect, fixes every 2 min. w/ confidence & sources, OOD/Conn be proactive w/ identifying & communicating.	D, II	4	
Blue/White Collision	C, I	2	SUWC: pass shipping info., ships adhere to Rules of the Road, use Furuno/ARPA, dec. speed in strait, pass contacts to BWC/SUWC on net.	D, II	4	
Non-compliant, non-squawking low slow flyer	B, I	1	ADC: proactively identify & resolve tracks; CFMCC: set weapons posture & status for threat; IWC: monitor & report I&W to BWC/ADC on net.	C, II	3	
Tide/current/waves	A, III	2	SUWC: plan during favorable conditions, pass to restrict access to wx decks during high seas, update BWC on changes.	A, IV	3	
Fog/Reduced visibility/Inclement weather	B, II	2	SUWC: ensure ships report restrictred visibility detail, use bell & horn, slow as needed.	B, IV	4	
Unknown submarine IVO PIM/Vital Area	B, II	2	ASWC: notify BWC/SUWC of known/unknown sub location; BWC: launch alert ASW if needed.	C, III	4	
Terrorist attack	D, I	3	BWC: PPRs; SUWC: man ships' 50-cals.; ADC: direct ATFP/SAR helo	D, III	5	
Inattention/ complacency	A, III	2	SUWC: limit RMD watch duration; ALL: ensure rested & nourished	B, III	3	

Residual Risk

Risk Management Matrix OPNAVINST 3500.39B

SEVERITY	PROBABILITY A Likely	B Probable	C May	D Unlikely
I Death, Loss of Asset	1	1	2	3
II Severe Injury, Damage	1	2	3	4
III Minor Injury, Damage	2	3	4	5
IV Minimal Threat	3	4	5	5

1-Critical 2-Serious 3-Moderate 4-Minor 5-Negligible

= Critical Risk = Serious Risk = Moderate Risk = Minor Risk = Negligible Risk

Implement Controls

Make Implementation Clear

- **Use examples, pictures, or charts**
- **Describe expectations clearly**

Establish Accountability

- **Assign individuals clear risk control responsibilities**

Provide Support

- **Command provide personnel & resources**
- **Make it sustainable**
- **Employ a feedback mechanism**
- **Integrate into plans**
- **Consider control conflicts**

Involve Operators / Subject Matter Experts

Supervise

Monitor

Are the controls working

Manage emerging changes (ABC*D*)

Identify new hazards

Review

Measure risk controls' effectiveness

Was mission successful

Identify root causes of conditions that led to failures

Feedback

Implement new controls

Save all documentation

Recommend actionable solutions to prevent other failures

Submit lessons learned

Involve Operators / Subject Matter Experts

Deliberate ORM Example

Straits Transit Risk Assessment

Hazard/Threat Effect	Assess	RAC	Risk Control Action	Re-assess	Residual	Supervision
Grounding/Flooding/ Navigation error	C, II	3	SUWC: ensure ships' report RMD in effect, fixes every 2 min. w/ confidence & sources, OOD/Conn be proactive w/ identifying & communicating.	D, II	4	SUWC: monitor all vessels & report when any vessel comes w/in 500 yds of shoal water; BWC: backup.
Blue/White Collision	C, I	2	SUWC: pass shipping info., ships adhere to Rules of the Road, use Furuno/ARPA, dec. speed in strait, pass contacts to BWC/SUWC on net.	D, II	4	SUWC: monitor all vessels for CBDR or min range inside vital area; BWC/ASWC: backup.
Non-compliant, non-squawking low slow flyer	B, I	1	ADC: proactively identify & resolve tracks; CFMCC: set weapons posture & status for threat; IWC: monitor & report I&W to BWC/ADC on net.	C, II	3	ADC: monitor all tracks for possible low slow flyers; IWC: monitor I&W; BWC: backup ADC/IWC.
Tide/current/waves	A, III	2	SUWC: plan during favorable conditions, pass to restrict access to wx decks during high seas, update BWC on changes.	A, IV	3	SUWC: monitor changing conditions; CSG OPS: call BWC if conditions become sig. different than forecast.
Fog/Reduced visibility/Inclement weather	B, II	2	SUWC: ensure ships report restrictred visibility detail, use bell & horn, slow as needed.	B, IV	4	SUWC: report when vis<3NM & low visibility set, monitor speed.
Unknown submarine IVO PIM/Vital Area	B, II	2	ASWC: notify BWC/SUWC of known/unknown sub location; BWC: launch alert ASW if needed.	C, III	4	ASWC: monitor all subsurface contacts & report possible locations for unknown; BWC/SUWC: backup.
Terrorist attack	D, I	3	BWC: PPRs; SUWC: man ships' 50-cals.; ADC: direct ATFP/SAR helo	D, III	5	SUWC/IWC: monitor I&W and use PPRs as required. BWC/ADC: backup.
Inattention/ complacency	A, III	2	SUWC: limit RMD watch duration; ALL: ensure rested & nourished	B, III	3	ALL: backup watches & supervisors relieve if needed

= Critical Risk = Serious Risk = Moderate Risk = Minor Risk = Negligible Risk

In the bigger picture

- In planning
  - we conduct risk assessment and develop controls.
- In operations
  - we update risk assessment and implement controls.
- In sustainment
  - we continue to update assessments and adjust controls.
- After action
  - we provide feedback and capture lessons learned to integrate the next time.

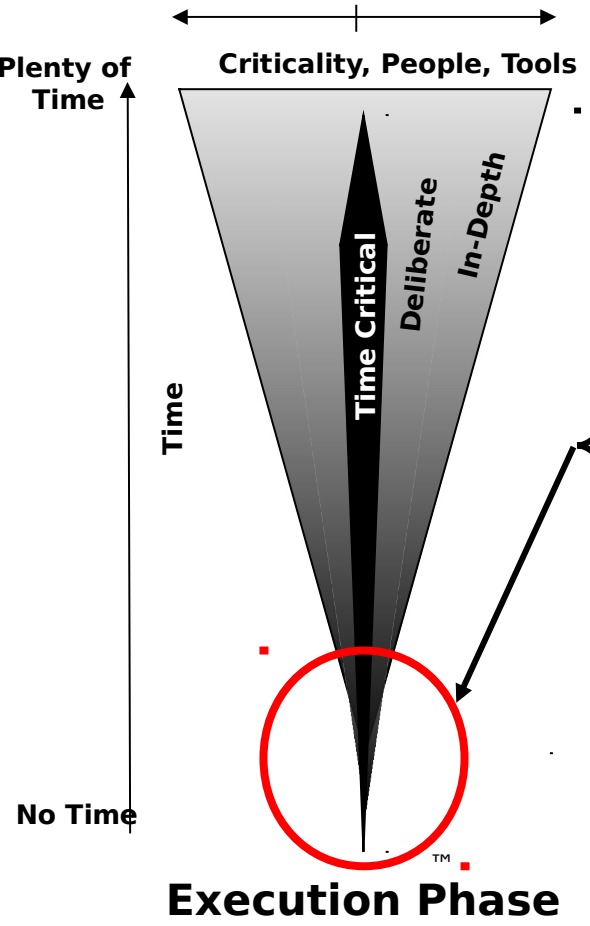
ORM Mind Set…

Change the Perception of Risk Management

- Technique to connect all three levels of ORM
- Energizes a final execution of deliberate ORM process
- Spurs the use of Time Critical ORM during execution
- The missing piece in ORM understanding and proper application

Time Critical RM

What's different today?



"A - B - C - D"

A ssess what's going on

B alance your options

C ommunicate risks and intentions

D *o* and *Debrief* to improve

5 Step ORM Process

&

Crew Resource Management

Crew Resource Management

- The effective use of all available resources by individuals, crews, and teams to safely and efficiently accomplish the mission or task
- The goal is to increase mission effectiveness by :
  - Minimizing crew preventable errors
  - Maximizing crew coordination
  - Optimizing/enhancing the application of risk management
- CRM training teaches human factor skills that enable individuals to identify and manage conditions that may otherwise lead to human errors

CRM & Time Critical RM

CRM Skills

Situational Awareness
- I know my environment
- I can see changes

Mission Analysis
- I can assess the changes
- I can see how they affect my mission

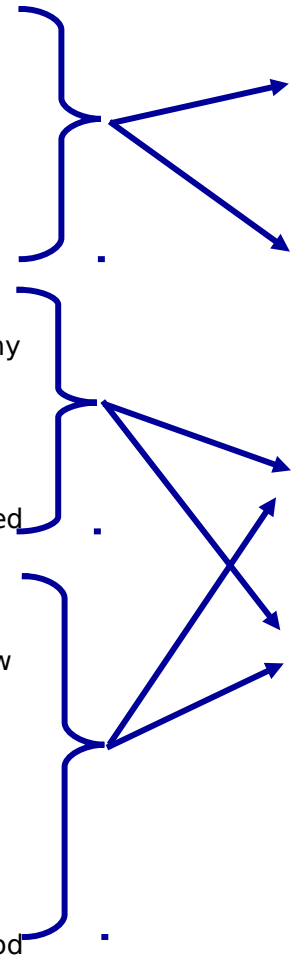
Assertiveness
- I have confidence in myself, my team, and my leadership to bring new threats to their attention

Communication
- I need to let my teammates or others involved know what I know

Leadership
- My leaders accept my plan for action or know how to act to manage new risk

Adaptability/Flexibility
- The plan is flexible and we can adapt to changes

Decision Making
- We have enough information, time and a good plan of action, or we need help



Time Critical Process

Assess the mission for potential adverse consequences

Balance the use of Resources to minimize risk

Communicate Risks and Intentions

Do and debrief to improve future performance

Communicating the Message

Time Critical and Deliberate Risk Management Relationship

Time Critical Process Mnemonic

A – Assess (your situation, your potential for error)

B – Balance Resources (to prevent and trap errors)

C – Communicate (risks and intentions)

D – Do and Debrief (take action and monitor for

5-Step Deliberate Process

1. Identify Hazards
2. Assess Hazards
3. Make Risk Decisions
4. Implement Controls
5. Supervise (watch for

Reconsider this situation...

It’s about informed decisions.

Resources & Tools
Getting to the website…

Resources & Tools

www.safetycenter.navy.mil

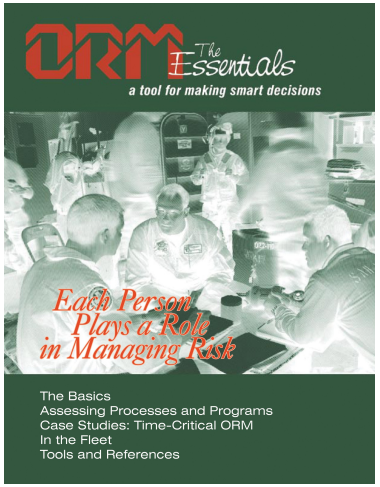
NSC Website: a Valuable Resource

NAVAL SAFETY CENTER
Work, Play, Live...Safely!
Home | Afloat | OSH | Ashore | Aviation | Media | Acquisition | Resources | Training | Departments | Staff | Site Map
RESOURCES
Executive Summary
DKO Secure Site
CMC Toolbox
Hearing Conservation Toolbox
POD Notes
POD Slogans
Presentations
SafeTips
Safety Toolbox
Statistics
Success Stories
Traffic Safety Toolbox
TRiPS (Travel Risk Planning System)
FOIA Request - Navy
FOIA Request - NSC
Best Practices
Best Practices Feedback Form
SERVICES
Culture Workshops
Safety Surveys
POPULAR
Friday Funnies
Photo of the Week
SEARCH OUR SITE
Show 10 results per page.
Submit Search
Reset
You can also use our Site Map to get to the main sections of our site.
CONTACT US
Naval Safety Center
375 A Street
Norfolk, VA 23511
(757) 444-3520 // (DSN 564)
Contact the Webmaster or Public Affairs Officer
Traffic Safety Headlines
Too many of our most precious assets, our people, are dying in car and motorcycle mishaps. This poignant video captures the tragedy of our losses. View the video, download it, share it at shop training sessions or at stand-downs. Our young Sailors and Marines are the future. Take time to share the message that we must work together to prevent these senseless deaths.
We made this video several weeks ago. Since then, the total number of PMV (2-wheel and 4-wheel) deaths during FY08 has increased to 111. Of those deaths, 58 were on motorcycles, and 51 of the motorcycle deaths were on sport bikes.
Click here to download: wmv (17MB) | flv (15.52MB)
Traffic Safety Headlines
WHAT'S NEW
MCLB Barstow VPP Award
New best practices:
Ladder Treads--Repair (USS Anzio)
Video--Safety and Humor (USS Higgins)
Deckplate Dialogue
Put the Brakes on Fatalities Day
Fall Campaign 2008
Save-A-Life Tour (National High Impact Awareness Program)
New Caption Contest
NSC Website Tour New presentation!
Critical Days of Summer 08
Drive Safely Work Week 2008--Oct 6-10
PMV Counter
for the latest statistics, please refresh your browser
Number of days since the last fatality
1 2-Wheel - USN
7 4-Wheel - USN
16 2-Wheel - USMC
28 4-Wheel - USMC
USN:
05 Oct 09 (Spring View, CA) E-5 died from injuries sustained in a motorcycle accident.
09 Aug 08 (Jacksonville, FL) E-3 died on 29 Sep 08 from injuries sustained as a passenger in an automobile accident when the car was side-swiped and flipped.
USMC:
19 Sep 08 (W CO/1ST BN/4TH MAR) Pala, CA. E-4 died in a motorcycle accident when he lost control and crashed due to gravel on the road.
07 Sep 08 (1ST MARDIV/3RD AA BN) Amboy, CA. E-4 died on 07 Sep 08 from injuries sustained in a single vehicle accident.
PMV Stats | PMV Narratives | Preliminary Loss Report (PLR)
LATEST PODCASTS
From the Archives of the Friday Funnies: "Calibrating Your Risk-o-Matic"
From the Archives of the Friday Funnies: "The Adventure of the 8,000-Pound Bear Trap"
LATEST VODCASTS
Friday Funnies News Desk -- Episode 6
Friday Funnies News Desk -- Episode 5
NEW ARTICLES/VIDEOS
New Military Sport Bike Training Unveiled in Norfolk
Admiral Johnson discusses TCRM
NEWEST MAGAZINE EDITIONS
September-October
Approach
Summer
Mech
Fall
2008
RIDE
POPULAR PLACES
TRiPS
Motorcycle Training POC
SAFETY CAMPAIGN
NESB
MARINE CORPS SAFETY RESOURCES
WESS
PMV Investigation
BEST PRACTICES
JSSC
Motorcycle Census
ORM
POA&M

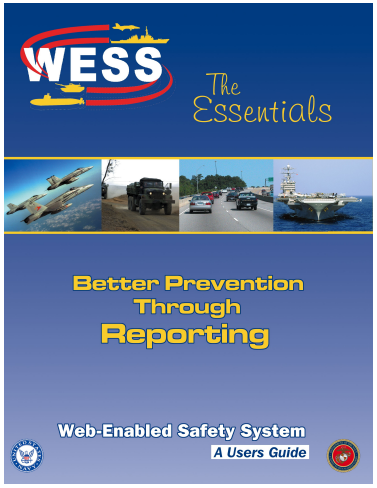
Resources & Tools

- Web Enabled Safety System **(WESS)**:
  - Web-enabled reporting and data retrieval system
  - Allows submission & routing of 5102 mishap / hazard notifications & 3750 hazard reports
  - Provides real-time reporting
  - Allows retrieval of data so activities can perform their own analyses (across DOD)
- Travel Risk Planning System **(TRiPS)**:
  - Provides ORM trip assessment and actual mishap cases relevant to planned trip
  - Risk values / models based on National Transportation Safety Board (NTSB) data
  - Trip map, times, distances and other products improve *supervisor interaction*
  - Computer based training (CBT) course content designed to help change behavior
- Total Risk Assessment and Control System **(TRACS)**:
  - Evolution risk assessment tool
  - Allows user to assess, manage and report on hazards, risks & controls
  - Public library of completed assessments available for others to modify for their specific needs

Additional Resources…


ORM
The Essentials
a tool for making smart decisions
Each Person Plays a Role in Managing Risk
The Basics
Assessing Processes and Programs
Case Studies: Time-Critical ORM In the Fleet
Tools and References

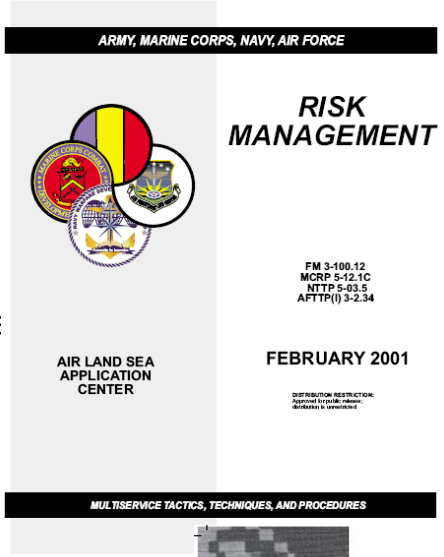
- Focus on time-critical ORM
- Includes basic and advanced concepts
- Real-life scenarios and analysis
- Success stories, lessons learned from fleet units
- Tools, references and links

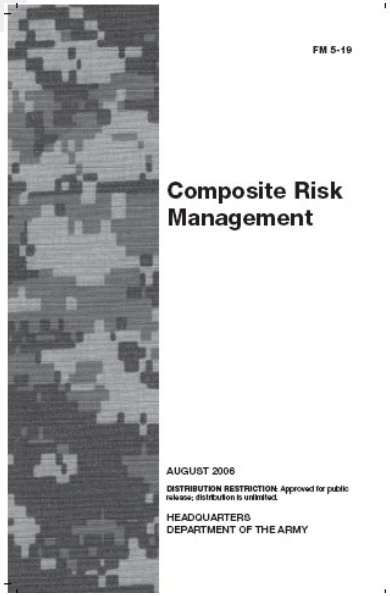


- Detailed user's guide
- Includes FAQs, guidance for common problems
- Flow chart of complete reporting and QA process
- Covers both 3750 and 5102 topics, incl. aviation, motor vehicles, explosives, diving, OSH and parachute

Resources & Tools

- **Joint Publications:**
  - Army, Marine Corps, Navy, Air Force Risk Management (FM 3-100.12, MCRP 5-12.1C, NTTP 5-03.5, AFTTP(I) 3-2.34)
  - JP 3-0: Joint Operations
  - JP 5-0: Joint Operation Planning
- **US Navy and US Marine Corps**
  - OPNAVINST 3500.39B / MCO 3500.27B – Operational Risk Manage
  - Navy Knowledge Online (NKO)
  - Naval Safety Center ORM website http://www.safetycenter.navy.mil/orm/
  - Marine Net – Distance Learning Environment https://www.marinenet.usmc.mil/marinenet/
- **US Army**
  - FM 5-19: Composite Risk Management - Aug 06
  - Composite Risk Management website: https://crc.army.mil/RiskManagement/
  - Army Knowledge Online (AKO)
- **US Air Force**
  - http://afsafety.af.mil/orm/orm.asp
  - Total Risk Assessment and Control System (TRACS) https://rmis.kirtland.af.mil/default.asp
- **US Coast Guard:**
  - http://www.uscg.mil/hq/g-w/g-wk/wks/cgRMIS.htm/





Risk management… It is a mindset

Summary

- **Humans are part of all Navy systems**
- **Managing the risk of human error improves capabilities and reduces losses**
- **ORM:**
  - A proactive, systematic tactic to defeat Blue Threats
  - A leadership tool to assist in making informed risk decisions
  - Should be integrated into your command planning, briefing, execution and after action processes
  - Relies on education, training, experience and teamwork
  - Requires outstanding communication skills at all levels

The Challenge

- **Engaged Leadership**
- **Support and actively promote integration of ORM**
  - On and Off Duty
  - Use Deliberate Assessment Process
  - Integrate TCRM - “What’s different today?”; “ABCD”
  - Support ORM Assessment at all levels
- **Use the resources and tools available**
- **Establish an environment where hazards can be identified by anyone at any time**
- **Provide feedback and share**
- **Work together to lookout for our shipmates (on and off duty) and preserve DOD resources in order to ensure mission readiness and help eliminate these…**

FAMOUS LAST WORDS

IT WILL CARRY MY WEIGHT.....

I'LL CLEAN UP WHEN I'M FINISHED.....

YOU DON'T HAVE TO KILL POWER IF YOU'RE GOOD.....

THIS IS HOW WE'VE ALWAYS DONE IT.....

I'VE DONE THIS A THOUSAND TIMES.....

I'LL NEVER TAKE MY WEDDING RING OFF....

DON'T NEED THE MANUAL - I'VE GOT IT MEMORIZE

I CAN DO THIS WITH MY EYES CLOSED....

I'VE GOT IT, NOW LET ME SHOW YOU WHAT THIS BABY CAN DO....

WATCH

Thanks for your ~~attention~~

Questions?